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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/506,837	09/07/2004	Thomas Vollmer	DE 020061	8928

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EXAMINER

FIGUEROA, MARISOL

ART UNIT

PAPER NUMBER

2617

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/07/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/506,837

Applicant(s)

VOLLMER ET AL.

Examiner

Marisol Figueroa

Art Unit

2617

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 September 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 September 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Claim Objections

1. **Claims 1-5** are objected to because of the following informalities:

(a) Claims 1-5 are directed to a method for data transmission, however, the claims does set forth any steps involved in the method, it is common US practice for method claims to recite active steps delimiting how the invention is practiced.

The following claim structure is suggested:

- A method for data transmission in a power supply network, comprising:
- transmitting data on a particular phasing line (11) of the power supply network;
- receiving the data and then re-transmitting the data on at least one phasing line (12, 13) different from the said phasing line (11).

Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. **Claim 1** is rejected under 35 U.S.C. 102(e) as being anticipated by HAUCK et al. (US 2004/0108941 A1).

Regarding claim 1, Hauck discloses a method for data transmission in a power supply network, wherein data transmitted on a particular phasing line (11) of the power supply network is received and then re-transmitted, characterized in that the data is re-transmitted on at least one

Art Unit: 2617

phasing line (12, 13) different from the said phasing line (11) (Abstract; paragraphs [0015], [0048]; a repeater coupler connected between phase A and phase B of a power line network, repeats and amplify a data signal received from either phase line to the opposite phase line).

4. **Claims 1-3, 6, 9, and 10** are rejected under 35 U.S.C. 102(e) as being anticipated by BELSAK, JR. (US 2004/0067745 A1).

Regarding claim 1, Belsak discloses a method for data transmission in a power supply network, wherein data transmitted on a particular phasing line (11) of the power supply network is received and then re-transmitted, characterized in that the data is re-transmitted on at least one phasing line (12, 13) different from the said phasing line (11) (Fig. 3; Abstract, lines 1-7; paragraphs [0011]-[0015], and [0068]; figure 3 illustrates a power-line communication network comprising phase lines P_1 , P_2 and P_3 and a plurality of repeaters 71, 72, ... which repeats communication data contained in signal S_0 , for example, repeater 71 receives signal S_0 and repeats or transmits the signal to repeater 72 which then transmits the signal S_2 over P_2).

Regarding claim 2, Belsak discloses a method as claimed in claim 1, characterized in that the data is re-transmitted on all phasing lines (11 - 13) (Fig. 3; Abstract, lines 1-7; paragraphs [0011]-[0021], and [0068]; figure 3 illustrates a power-line communication network comprising phase lines P_1 , P_2 and P_3 and a plurality of repeaters 71, 72, ... which repeats communication data contained in signal S_0 , for example, repeater 71 receives signal S_0 and repeats or transmits the signal to repeater 72 which then transmits the signal S_2 over P_2 and this continues until the signal is transmitted in all phase lines P_1 , P_2 and P_3 as shown in figure 3).

Regarding claim 3, Belsak discloses a method as claimed in claim 1, characterized in that the data is re-transmitted on the phasing lines (11-13) on which its original signal strength lay below a threshold value (paragraphs [0011]-[0015], and [0037] lines 1-9; the communication signals

Art Unit: 2617

transmitted over the power lines are repeated (i.e., re-transmitted) in order to keep the communication signals from being reduced below a predefined level).

Regarding claim 6, Belsak discloses a device (1) for data transmission in a power supply network, comprising a receiver (3 - 5) for receiving data transmitted on a first phasing line (ii - 13) of the power supply network, and a transmitter (3 - 5) for transmitting data on a second phasing line (12 - 13) of the power supply network, characterized in that the first and second phasing lines are different (Fig. 3 and 5a; Abstract, lines 1-7; paragraphs [0011]-[0015], [0068], and [0070]; repeaters 71, 72,... (included in phase lines P_1 , P_2 and P_3) re-transmit communication data from one phase line P_1 to another P_2 , the repeaters as shown in figure 5a comprises an RF coupler 170 (i.e., receiver) to receive RF signal S_0 and a RF antenna 174 (i.e., transmitter) for transmitting signals 102 indicative of signals S_0).

Regarding claim 9, Belsak discloses a device as claimed in claim 6, characterized in that it is equipped with additional transmitting and receiving modules for connection to other networks with different transmission methods (paragraphs [0034]-[0036]).

Regarding claim 10, Belsak discloses a device as claimed in claim, characterized in that it is equipped with an additional network filter for separation of an in-home network from an external network, wherein a further transmitter and receiver are preferably integrated on the external side, and selected data is routed past the filter (Fig. 3; paragraph [0070]; the repeaters comprises an analog front-end (i.e., filter) which filters and processes the received signals).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

Art Unit: 2617

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. **Claim 4** is rejected under 35 U.S.C. 103(a) as being unpatentable over BELSAK, JR. in view of RYE et al. (US 6,229,433 B1).

Regarding claim 4, Belsak discloses a method as claimed in claim 1, but does not particularly disclose wherein the method is characterized in that the data is re-transmitted only on the phasing line (11-13) to which addressees (20-25) of the data are connected.

However, this feature is well known in the art and Rye is evidence of the fact. Rye teaches an appliance control system in which appliances control modules are connected to an existing ac power line and controlled by transmitting address and control or functions codes. Each of the control modules is identified by a unique binary address and receives and decodes the binary coded burst signals transmitted on the ac power line destined to them. When a module detects its address, it performs the prescribed control function in accordance with the binary control signal (Abstract; col. 1, line 61 – col. 2, line 61-47).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention, to modify Belsak to incorporate the step of re-transmitting on the phasing line to which addressees of the data are connected, as suggested by Rye, in order to assure that the data gets to their addressees.

7. **Claim 5** is rejected under 35 U.S.C. 103(a) as being unpatentable over BELSAK, JR. in view of SANDERSON (US 2002/0109585 A1).

Regarding claim 5, Belsak discloses a method as claimed in claim 1, but fails to particularly disclose wherein the method is characterized in that a preparation, in particular a channel equalization and channel matching, is undertaken before the re-transmission.

However, Sanderson teaches that communication signals transmitted over a power line distribution network undergoes very complicated phase distortions and this phase distortion may be avoided if the power line distribution circuit is compensated or impedance matched (i.e., channel matching) or by using an automatic equalizer within the repeater to address this problem (paragraph [0049]).

Therefore, one of ordinary skill in the art at the time of the invention would have been motivated, to modify Belsak to include the step of preparing the data before the re-transmission, in particular a channel equalization and channel matching, as suggested by Sanderson, in order to avoid the phase distortions in communication signals transmitted over power line networks.

8. **Claim 7** is rejected under 35 U.S.C. 103(a) as being unpatentable over BELSAK, JR. in view of BRUCCOLERI et al. (US 2003/0031310 A1).

Regarding claim 7, Belsak discloses a device as claimed in claim 6, characterized in that it comprises a receiver and a transmitter (3 - 5) for each phasing line (11 - 13) of the power supply network (Fig. 3 and 5a; Abstract, lines 1-7; paragraphs [0011]-[0015], [0068], and [0070]; repeaters 71, 72,... are included in each of phase lines P_1 , P_2 and P_3 and each include an RF coupler 170 (i.e., receiver) to receive RF signals and a RF antenna 174 (i.e., transmitter) for transmitting RF signals).

But, Belsak fails to particularly disclose wherein all receivers and transmitters are coupled together by a control unit(2).

However, Bruccoleri teaches a control system and method to suppress noise in a power-line based system. As shown in figure 1, device repeaters 18, 20 (i.e., transmitter/receiver) are connected to power lines 28, 30 and coupled to a control device 12 that controls a phase signal of the device repeater to suppress noise during operation of the electrical device associated with the device repeater, furthermore communicates with the repeaters through control signals (Fig. 1; paragraphs [0007], and [0013]).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention, to modify Belsak to introduce a control unit for coupling all the receivers and transmitters, as suggested by Bruccoleri, in order to control the signals that will remotely control the operation of an electrical device associated with the device repeater.

9. **Claim 8** is rejected under 35 U.S.C. 103(a) as being unpatentable over BELSAK, JR. in view of FUKAGAWA et al. (US 4,556,865).

Regarding claim 8, Belsak discloses a device as claimed in claim 6, but fails to particularly disclose wherein the device is characterized in that it comprises a storage device for the temporary storage of data transmitted on the phasing lines (11-13) of the power supply network.

However, Fukagawa teaches a data transmission system utilizing a power line comprising a repeater (i.e. device) coupled to a power line, the repeater receives control data from a transmitter and store the control data in a memory (i.e., temporary storage) and then later retransmitted after the lapse of a predetermined period of time (Abstract; col. 2, lines 22-41).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention, to modify Belsak to incorporate a storage device for the temporary storage of data transmitted on the phasing lines, as suggested by Fukagawa, in order to re-transmit the data transmitted on the phasing lines at a later time.


Art Unit: 2617


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marisol Figueroa whose telephone number is (571) 272-7840. The examiner can normally be reached on Monday Thru Friday 8:30 a.m. - 5:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lester G. Kincaid can be reached on (571) 272-7922. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


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Art Unit 2617


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